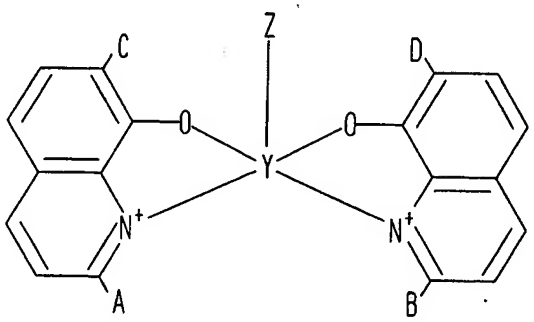
IN THE CLAIMS:

Please amend the claims as follows:

1. – 8. (Cancelled)

9. (Currently amended) A bridged polysesquioxane composition comprising: a bridged polysesquioxane host matrix comprising sesquioxane moieties and organic moieties, said sesquioxane moieties comprising a metallic element, said organic moieties interposed between sesquioxane moieties; and a guest molecule comprising a lanthanide atom; at least some of said organic moieties comprising a substituent selected from the group consisting of electron withdrawing functional groups and electron donating functional groups; ~~The composition of claim 3~~ in which said guest molecule is a compound having Formula 1 below,



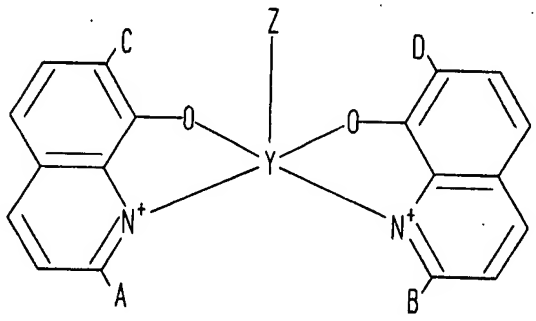
in which ~~A and B~~ A, B, C and D each independently can be hydrogen or -alkyl; Y is a lanthanide atom; and Z is an oxyaryl group.

10. – 13. (Cancelled)

14. (Original) The composition of claim 9 in which Z is an aromatic moiety selected from the group consisting of: phenolic, alkylphenolic, hydroxynaphthalenyl, alkylhydroxynaphthalenyl, 8-hydroxyquinolinyl, and alkyl-8-hydroxyquinolinyl.

15. – 25. (Cancelled)

26. (Currently amended) A process for making a bridged polysesquioxane composition comprising the steps of: providing a bridged polysesquioxane host matrix comprising sesquioxane moieties and organic moieties, said sesquioxane moieties comprising a metallic element, said organic moieties interposed between sesquioxané moieties; and providing a guest molecule comprising a lanthanide atom; at least some of said organic moieties comprising a substituent selected from the group consisting of electron withdrawing functional groups and electron donating functional groups; ~~The process of claim 19~~ in which said guest molecule is a compound having Formula 1 below,



in which ~~A and B~~ A, B, C and D each independently can be hydrogen or -alkyl; Y is a lanthanide atom; and Z is an oxyaryl group.

27. – 30. (Cancelled)

31. (Original) The process of claim 26 in which Z is an aromatic moiety selected from the group consisting of: phenolic, alkylphenolic, hydroxynaphthalenyl, alkylhydroxynaphthalenyl, 8-hydroxyquinolinyl, and alkyl-8-hydroxyquinolinyl.

32. – 34. (Cancelled)

35. (Currently amended) A gain medium ~~The gain medium of claim 34,~~ comprising the composition of claim 9, in which the composition has a fluorescence peak that is capable of amplifying light within at least one wavelength range selected from the group consisting of 900-1000 nanometers, 1260-1360 nanometers, and 1500-1600 nanometers.

36. – 41. (Cancelled)

42. (Currently amended) An active material for an upconversion laser ~~The active material of claim 41,~~comprising the composition of claim 9, in which the composition has a fluorescence peak that is capable of amplifying light within at least one wavelength range selected from the group consisting of 900-1000 nanometers, 1260-1360 nanometers, and 1500-1600 nanometers.

43. – 45. (Cancelled)

46. (New) The composition of claim 9, including organic moieties having either or both of an electron withdrawing functional group and an electron donating functional group, wherein the electron withdrawing functional group is selected from the group consisting of –CN, SO_3H, haloalkyl, haloalkenyl, or haloalkynyl; and wherein the electron donating functional group is selected from the group consisting of a urethane group, an amide group, or: –NR_2, -NH_2, -NRH, -OR, -PR_2, -PH_2, or –PRH, in which R is a lower alkyl.

47. (New) The process of claim 26, wherein organic moieties have either or both of an electron withdrawing functional group and an electron donating functional group, wherein the electron withdrawing functional group is selected from the group consisting of –CN, SO_3H, haloalkyl, haloalkenyl, or haloalkynyl; and wherein the electron donating functional group is selected from the group consisting of a urethane group, an amide group, or: –NR_2, -NH_2, -NRH, -OR, -PR_2, -PH_2, or –PRH, in which R is a lower alkyl.